What is claimed is:

1. A semiconductor device comprising:

a signal line, through which a signal having a desired frequency f_0 passes, formed on a semiconductor substrate; and

a differential signal line through which a signal in opposite phase to said signal passes, or which is connected to a ground power supply,

said signal line and said differential signal line being laminated via an insulating layer so as to be substantially in parallel with each other, and

an actual wiring length l of said signal line being longer than a wiring length l_0 determined by the following equation

$$l_0 = \sqrt{\frac{\frac{L}{C} + \sqrt{\frac{R^2 + 8\pi^2 f_0^2 L^2}{4\pi^2 f_0^2 C^2}}}{R^2 + 4\pi^2 f_0^2 L^2}}$$

where R represents a resistance component, L represents an inductance component, and C represent a capacitance component per unit length of said signal line in such a case that said differential signal line does not exist.

2. The semiconductor device according to claim 1, wherein said signal line has substantially the same width with said differential signal line, and said signal line is located at a position corresponding to that of said differential signal line via said insulating layer in the main part of said semiconductor substrate.

3. The semiconductor device according to claim 1, further comprising a second differential signal line formed via a second insulating layer at a side opposite to that of said differential signal line formed via said insulating layer relative to said signal line.

4. The semiconductor device according to claim 1, wherein there are at least two of said signal lines, which are formed

in the same layer, and a second differential line different from said differential signal line is formed between said at least two signal lines in the same layer.

5. The semiconductor device according to claim 1, wherein said signal line, said insulating layer, and said differential signal line are formed in a groove in a second insulating layer formed on said semiconductor substrate.

6. The semiconductor device according to claim 1, wherein said signal line and said differential signal line are substantially in parallel with each other in the main part of said semiconductor substrate.

7. A method of manufacturing a semiconductor device comprising:

forming a first conductive layer on a semiconductor substrate;

forming an insulating layer on said first conductive layer;

forming a second conductive layer on said insulating layer; and

pattering said second conductive layer, said insulating layer, and said first conductive layer at a time to form a first wiring from said first conductive layer, and to form a second wiring from said second conductive layer.

8. The method of manufacturing a semiconductor device according to claim 7, wherein said first wiring is one of a signal line or a differential signal line through which a signal in opposite phase to a signal passing through the signal line passes, or which is connected to a ground power supply, and said second wiring is the other of said signal line and said differential signal line.

9. A method of manufacturing a semiconductor device comprising:

forming a groove in a first insulating layer formed on a semiconductor substrate;

forming a first wiring by filling said groove with a wiring material;

forming a second insulating layer covering said first wiring;

forming a third insulating layer on said second insulating layer;

forming a second wiring by forming an opening extending to said second insulating layer through said third insulating layer at a position corresponding to said first wiring, and filling the opening with a wiring material.

10. The method of manufacturing a semiconductor device according to claim 9, wherein said first wiring is one of a signal line or a differential signal line through which a signal in opposite phase to a signal passing through the signal line passes, or which is connected to a ground power supply, and said second wiring is the other of said signal line and said differential signal line.

11. A method of manufacturing a semiconductor device comprising:

forming a groove in a first insulating layer formed on a semiconductor substrate;

forming a first wiring layer covering sides and a bottom of said groove; and

forming a second wiring layer in said groove via a second insulating layer so as to cover said first wiring layer.

12. The method of manufacturing a semiconductor device according to claim 11, wherein said first wiring is one of a signal line or a differential signal line through which a signal in opposite phase to a signal passing through the signal line passes, or which is connected to a ground power supply, and said second wiring is the other of said signal

line and said differential signal line.